

### **REMARKS**

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

#### **Summary of Telephonic Interview**

Applicants thank the Examiner for the courtesies extended during the telephonic interview of August 5, 2009.

During the interview, Applicants' representative and the Examiner discussed the rejection under 35 U.S.C. § 112, second paragraph. Applicants' representative and the Examiner agreed upon an amended version of claim 3, which would overcome both the objection and the indefiniteness rejection. Additionally, the Examiner indicated that, upon further consideration, the rejections under 35 U.S.C. § 112, second paragraph of claims 7, 8, 11 and 12 would be withdrawn.

Again, Applicants kindly thank the Examiner for her helpful comments, and have incorporated the agreed upon amendments, as discussed below.

#### **Claim Amendments**

Claim 3 has been amended in the manner agreed upon by Applicants' representative and the Examiner during the telephonic interview discussed above. Claim 9 has been amended in the manner suggested by the Examiner, i.e., to replace "precipitate" with --precipitated--.

#### **Claim Objections**

The objection to claims 3 and 9 has been rendered moot by the above-discussed claim amendments.

#### **Rejection Under 35 U.S.C. § 112, Second Paragraph**

Claims 3, 7, 8, 11 and 12 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite.

The rejection of claim 3 has been rendered moot by the above-discussed claim amendments.

Furthermore, as indicated by the Examiner, the rejection of claims 7, 8, 11 and 12 should be withdrawn.

Accordingly, it is respectfully requested that the above-rejection be withdrawn.

**Patentability Arguments**

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

**Rejections Under 35 U.S.C. § 102(b) and/or 35 U.S.C. § 103(a)**

Claims 1 and 3 are rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over Persello (U.S Patent No. 5,342,598).

This rejection is respectfully traversed for the following reasons.

Persello does not explicitly refer to a limitation that the cake of precipitated silica has a property of "a light-scattering index (n-value) of at least 2". It is therefore improper to assume that the cake of precipitated silica of Applicants' Claim 1 is disclosed in Persello.

In this regard, the Examiner states that such a limitation would be anticipated by Persello, on the grounds that Persello (allegedly) discloses the same production process as in the present application (Claim 3). However, the process which is disclosed in Persello is **not the same** as the process of Applicants' Claim 3, for the reasons stated below.

The process of Applicants' Claim 3 is different from the process of Persello in initial reaction liquid. The initial reaction liquid in the process of Applicants' Claim 3 is "aqueous alkali silicate solution", "alkaline aqueous solution of which pH is adjusted with a basic substance" or "water". The initial reaction liquid in the process of Persello is "a dispersion of colloidal silica" (see column 2, line 62 to column 3, line 3). Although the Examiner says that Persello discloses the use of aqueous sodium silicate solution as an initial reaction liquid, this is a misunderstanding. In Persello, aqueous sodium silicate solution is used as a starting material for

the production of a dispersion of colloidal silica, not as an initial reaction liquid (see column 3, lines 4-9, and EXAMPLE 1).

Thus, Persello fails to disclose or suggest the invention of Applicants' Claims 1 and 3. Accordingly, it is respectfully requested that the above-rejection be withdrawn.

Claims 1 and 3 are rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over Blume et al. (U.S Patent No. 6,268,424).

This rejection is respectfully traversed for the following reasons.

The process of Applicants' Claim 3 is different from the process of Blume et al. in materials to be added to the reaction liquid, and, as a result, is different in the property (e.g., BET specific surface area) of silica obtained. Specifically, an alkali silicate and a mineral acid are added simultaneously to the reaction liquid in the process of Applicants' Claim 3, whereas, in the process of Blume et al., an aluminum salt solution is simultaneously added to the reaction liquid as well as an alkali silicate solution and a mineral acid. Applicants' method uses no electrolyte, such as the aluminum salt solution in Blume et al., since the presence of an electrolyte in the system bars the production of a product with a large BET specific surface area, which Applicants' method aims to obtain. The present specification, page 11, lines 16-20, explains how the presence of an electrolyte is disadvantageous.

In fact, the silica of Applicants' Claim 1 has a BET specific surface area of "at least 220 m<sup>2</sup>/g", while the silica of Blume et al. has a BET specific surface area of "80 to 180 m<sup>2</sup>/g", according to column 2, lines 7-8, and the Examples. Blume et al. does not teach, or even suggest, a BET specific surface area which surpasses "180 m<sup>2</sup>/g".

For the aforementioned reasons, Blume et al. neither disclose nor suggest the invention of Applicants' Claims 1 and 3. Accordingly, it is respectfully requested that the above-rejection be withdrawn.

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Persello.

This rejection is respectfully traversed for the following reasons.

The comments set forth above concerning Persello are equally applicable to this

rejection, since claim 2 is directly dependent upon claim 1. Accordingly, the subject matter of claim 2 is patentable over Persello for the reasons discussed above, and it is respectfully requested that the above-rejection be withdrawn.

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Blume et al.

This rejection is respectfully traversed for the following reasons.

The comments set forth above concerning Blume et al. are equally applicable to this rejection, since claim 2 is directly dependent upon claim 1. Accordingly, the subject matter of claim 2 is patentable over Blume et al. for the reasons discussed above, and it is respectfully requested that the above-rejection be withdrawn.

Claims 1-3 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Alexander et al. (U.S. Patent No. 2,601,235).

This rejection is respectfully traversed for the following reasons.

The process of Applicants' Claim 3 is different from the process of Alexander et al. in initial reaction liquid. The initial reaction liquid in the process of Applicants' Claim 3 is "aqueous alkali silicate solution", "alkaline aqueous solution of which pH is adjusted with a basic substance" or "water". The initial reaction liquid in the process of Alexander et al. is silica sol.

Although the Examiner says that Alexander et al. disclose the use of aqueous sodium silicate solution as an initial reaction liquid, this is a misunderstanding. In Alexander et al., the aqueous sodium silicate solution is used as a starting material for the production of an aqueous dispersion of active silica, which is to be mixed with nuclei of high molecular weight silica formed from silica sol. Furthermore, the product which Alexander et al. intend to produce is a built-up silica, not a silica cake, as in the invention of Applicants' Claim 1.

On the aforementioned grounds, Alexander et al. fail to suggest the invention of Applicants' Claims 1 and 3, and the invention of Claim 5, which depends on Claim 1. Accordingly, it is respectfully requested that the above-rejection be withdrawn.

Claims 6-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Alexander et al., and further in view of Kono et al. (U.S. Patent No. 6,417,264).

This rejection is respectfully traversed for the following reasons.

The comments set forth above concerning Alexander et al. are equally applicable to this rejection, since claims 6-8 are indirectly dependent upon claim 1. Kono et al. fail to remedy the above-discussed deficiencies of Alexander et al. Accordingly, the subject matter of claims 6-8 is patentable over Alexander et al. in view of Kono et al. for the reasons previously discussed, and it is respectfully requested that the above-rejection be withdrawn.

Claims 9-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Alexander et al., and further in view of Kono et al. and Ichinose et al. (U.S. Patent Publication No. 2003/0039808).

This rejection is respectfully traversed for the following reasons.

The comments set forth above concerning Alexander et al. are equally applicable to this rejection, since claims 9-12 are indirectly dependent upon claim 1. Kono et al. and Ichinose et al. fail to remedy the above-discussed deficiencies of Alexander et al. Accordingly, the subject matter of claims 9-12 is patentable over Alexander et al. in view of Kono et al. for the reasons discussed above, and it is respectfully requested that the above-rejection be withdrawn.

Claims 1-3, 5 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hellring et al. (U.S. Patent No. 6,656,241).

This rejection is respectfully traversed for the following reasons.

The process of Applicants' Claim 3 is different from the process of Hellring et al. in initial reaction liquid. The initial reaction liquid in the process of Applicants' Claim 3 is "aqueous alkali silicate solution", "alkaline aqueous solution of which pH is adjusted with a basic substance" or "water". The initial reaction liquid in the process of Hellring et al. is aqueous alkali metal silicate solution which has been neutralized with the addition of an acid. In this connection, it is mentioned in Hellring et al. that "a first reaction mixture" is formed by the neutralization of aqueous alkali metal silicate solution with an acid (column 7, lines 24-26), and

that aqueous alkali metal silicate solution and acid are added simultaneously to this first reaction mixture (column 7, lines 45-48).

In detail, according to Example 1 of Hellring et al., potassium silicate solution and concentrated sulfuric acid are added simultaneously to aqueous potassium silicate solution (first reaction mixture, i.e., initial reaction liquid) which has been neutralized to pH 8.5, and, thus, reaction is initiated, through which reaction the pH of liquid is maintained at 8.5. In the process of Applicants' Claim 3, where aqueous alkali silicate solution is used as an initial reaction liquid, said initial reaction liquid can have any pH value. What is important in this process of Applicants' Claim 3 is that the pH value of initial reaction liquid after alkali silicate and mineral acid have been added simultaneously to the initial reaction liquid must be maintained at a fixed value within a range of from, 7.5 to 11.5, the variation width being within  $\pm 0.3$ .

The product of Hellring et al. is thus formed by a process which is different from the process of Applicants' Claim 3, and is therefore naturally different from the cake of Applicants' Claim 1. For instance, the product of Hellring et al., has a BET specific surface area of  $93 \text{ m}^2/\text{g}$  (Example 2) and  $98 \text{ m}^2/\text{g}$  (Example 6), which values are **much lower** than that of Applicants' product. It is impossible to say that the invention of Applicants' Claim 1 would have been obvious from the disclosure of Hellring et al.

The invention of Applicants' Claims 2, 5 and 7, which depend directly or indirectly on Claim 1, would also have been unobvious over the disclosure of Hellring et al. Accordingly, it is respectfully requested that the above-rejection be withdrawn.

Claims 6 and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hellring et al., and further in view of Kono et al.

This rejection is respectfully traversed for the following reasons.

The comments set forth above concerning Hellring et al. are equally applicable to this rejection, since claims 6 and 8 are directly dependent upon claim 1. Kono et al. and Ichinose et al. fail to remedy the above-discussed deficiencies of Hellring et al. Accordingly, the subject matter of claims 6 and 8 is patentable over Hellring et al. in view of Kono et al. for the reasons discussed above, and it is respectfully requested that the above-rejection be withdrawn.

Claims 9-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hellring et al., and further in view of Kono et al. and Ichinose et al.

This rejection is respectfully traversed for the following reasons.

The comments set forth above concerning Hellring et al. are equally applicable to this rejection, since claims 9-12 are indirectly dependent upon claim 1. Kono et al. and Ichinose et al. fail to remedy the above-discussed deficiencies of Hellring et al. Accordingly, the subject matter of claims 6 and 8 is patentable over Hellring et al. in view of Kono et al. for the reasons discussed above, and it is respectfully requested that the above-rejection be withdrawn.

**Conclusion**

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of objection and rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

Hirokatsu HAYASHI et al.

/Amy E. Schmid/

By 2009.11.20 15:36:49 -05'00'

Amy E. Schmid  
Registration No. 55,965  
Attorney for Applicants

AES/emj  
Washington, D.C. 20005-1503  
Telephone (202) 721-8200  
Facsimile (202) 721-8250  
November 20, 2009